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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/622,890	07/16/2003	Govind R. Kadambi	38105.830082.US0	2737
26582	7590	09/22/2004	EXAMINER	
HOLLAND & HART, LLP 555 17TH STREET, SUITE 3200 DENVER, CO 80201			ALEMU, EPHREM	
			ART UNIT	PAPER NUMBER
			2821	

DATE MAILED: 09/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/622,890	<b>Applicant(s)</b> KADAMBI ET AL.	
	<b>Examiner</b> Ephrem Alemu	<b>Art Unit</b> 2821	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 16 July 2003.  
 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.  
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-71 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) ☒ Claim(s) 49-70 is/are allowed.  
 6) ☒ Claim(s) 1-48 and 71 is/are rejected.  
 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.  
 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \*    c) ☐ None of:  
         1. ☐ Certified copies of the priority documents have been received.  
         2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
         3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
     \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Specification*

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. **It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.**

The abstract of the disclosure is objected to because the abstract contains phrases, which can be implied, such as, "The present invention provides" in line 1. The Office suggests, deleting and/or correcting "The present invention provides" in line 1 of the abstract will overcome the objection. Correction is required. See MPEP § 608.01(b).

### *Claim Objections*

2. Claims 21-23, 44-46, 49, 66-68 are objected to because of the following informalities: In claims 21-23, 44-46 and 66-68, respectively, replace "parallel a major axis" with --parallel to a major axis--.

In claim 49, line 20, replace "end;" with --end.-- since there is no additional feature recited after end. Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-4, 6 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Nghiem (US 6,008,762).

Re claims 1, 6 and 17, Nghiem discloses an antenna for a wireless device, comprising:

a ground plane (316) (Fig. 3);

a radiating element (i.e., conductive plate 304) (Fig. 3);

the radiating element (i.e., conductive plate 304) comprising a first conductive strip having a first end and second end such that a gap exists between the first end and the second end and the conductive strip forms a loop antenna (Fig. 3);

a dielectric space (i.e., dielectric substrate 320) residing between the ground plane (316) and the radiating element (i.e., conductive plate 304);

a shorting element (i.e., a shorting stub (not labeled) connecting one end of the conductive plate (314) to ground plane (316)) (Fig. 3; Col. 6, lines 1-2);

the radiating element comprises at least one non-radiating edge (i.e., one end of the conductive plate (304) that is connected to the ground plane (316) by the short stub (not labeled)) and at least one radiating edge (i.e., the other end of the conductive plate 4) (Fig. 3);

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the shorting element(i.e., a short stub connecting one end of the conductive plate (304) to ground plane (316)) residing on a non radiating edge of the radiating element and extending from the radiating element to the ground plane (Fig. 3; Col. 6, lines 1-2);

a feed tab (i.e., probe 324), and the feed tab (i.e., probe 324) residing on the non radiating edge of the radiating element and extending from the radiating element (i.e., conductive plate 304) towards the ground plane (316) (Fig. 3; abstract; Col. 6, lines 3-10; wherein the antenna is operating at a quarter wavelength).

Re claims 2 and 3, the loop antenna forms a geometric pattern of at least one of a rectangular shape (Fig. 3).

Re claim 4, the dielectric space comprises at least one of an air gap and a dielectric carriage (Fig. 3; Col. 5, lines 46-53).

5. Claim 71 is rejected under 35 U.S.C. 102(b) as being anticipated by Ying (US 6,166,694).

Re claim 71, Ying discloses an internal antenna for a wireless device, comprising:  
a ground plane (i.e., PCB 315);

means for radiating at least one resonant frequency (i.e., spiral arm 305 or 310), wherein the means for radiating comprises at least one loop antenna (i.e., spiral arm 305 or 310) having a gap and operating at a quarter wavelength (Figs. 3-5; Col. 4, line 29-Col. 5, line 28);

means for separating (i.e., dielectric substrate 320) the ground plane (i.e., PCB 315) from the means for radiating (i.e., spiral arm 305 or 310) (Fig. 3);

means for supplying power (i.e., antenna feed pin 325) to the means for radiating (i.e., spiral arm 305 or 310) (Figs. 3-5);

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means for shorting (i.e., ground post 335) the means for radiating (i.e., spiral arm 305 or 310) to the ground plane (i.e., PCB 315) (Fig. 3); and

means for tuning (i.e., matching bridge 330) the means for radiating (i.e., spiral arm 305 or 310) (Figs. 3-5; Col. 4, line 29- Col. 5, line 28).

6. Claims 1, 10-14, 18-20, 22, 24, 25, 27, 28, 30-32, 37-39, 40, 42, 43, 45, 47 and 48 are rejected under 35 U.S.C. 102(b) as being anticipated by Pankinaho et al. (US 6,693,594).

Re claims 1, 10-14, 18, 27, 28, Pankinaho discloses a multi band antenna (Figs. 1-4), comprising:

a ground plane (402) (Fig. 4);

a first radiating element (101) comprising a first conductive strip (i.e., first branch 109), the first conductive strip having a radiating edge (i.e., the edge that is not coupled to the ground plane via connection strips 411, 421 & 431) opposite a non-radiating edge (i.e., the edge that is coupled to the ground plane via connection strips 411, 421 & 431) and a first end and a second end, the first conductive strip is formed into a loop such that the first end and the second end form a gap (Figs. 1-4; Col. 4, lines 58-63; Col. 5, lines 13-22);

a second radiating element (110) comprising a second conductive strip arranged such that a portion of the second radiating element resides internal to the loop formed by the first conductive strip (Figs. 1-4);

a feed tab (105) (Figs. 1-4);

a shorting element (i.e., connection strips 411, 421 & 431); and

a connector joining the first radiating element (109) to the second radiating element (110) (Figs. 1-4; wherein the entire second radiating element resides internal to the loop formed by the first radiating element).

Re claims 30-32, Pankinaho further discloses the second radiating element resides substantially adjacent the non-radiating edge of the first conductive strip and the ground plane is separated from the first radiating element and the second radiating element by a dielectric space (Figs. 1-4).

Re claims 37-39, Pankinaho further discloses the loop (i.e. loop formed by the first conductive strip (branch 109)) is a rectangular geometric shape (Figs. 1-4; wherein the first conductive strip (i.e., branch 109) comprises plurality of width).

Re claim 40, Pankinaho further discloses the loop (i.e. loop formed by the first conductive strip (branch 110)) is a rectangular geometric shape (Figs. 1-4).

Re claims 19, 20, 24, 25, 42, 43, 47 and 48, Pankinaho further discloses the shorting element located the shorting element is substantially proximate at least one of the first end and the second end and/or adjacent at least one of the first end and the second end (Figs. 1-4).

Re claims 22, 45, Pankinaho further discloses the gap is parallel a minor axis of the ground plane (Figs. 1-4).

### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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8. Claims 5, 7-9, 15, 16, 21, 23, 26, 29, 32, 33-36, 41, 44 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pankinaho et al. (US 6,693,594).

Re claims 15 and 41, eventhough, Pankinaho does not disclose a meanderer line shape second conductive strip, providing a meanderer line shape second conductive strip would have been well in the skill of artisan in the antenna art for no other reason than operating the antenna in a multiple band.

Re claims 29 and 32, eventhough, Pankinaho does not disclose the second radiating element comprising plurality of internal radiating elements, it would have been obvious to one having a skill in the art to provide plurality of elements for no other reason than operating the antenna at a different desired frequency.

Re claims 5, 7-9, 16, 26, and 33-36, although, Pankinaho discloses at least one shorting post, Pankinaho does not disclose at least one loading plate and at least one matching stub, it is well in the skill of artisan in the antenna art to provide a matching stub and capacitive load for the purpose of tuning the antenna to a desired operating frequency.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Pankinaho's antenna with at least one loading plate and at least one matching stub for no other reason than further tuning the antenna.

Re claim 21, 23, 44 and 46, although, Pankinaho further discloses the gap is parallel to a minor axis of the ground plane (Figs. 1-4), the gap being parallel to major axis would have been an obvious design choice..



***Allowable Subject Matter***

9. Claims 49-70 are allowed.

10. The following is an examiner's statement of reasons for allowance: The prior art of record fail to teach or suggest, alone or in combination, the combination of the following limitations: "a first radiating element comprising a first conductive strip, the first conductive strip having a radiating edge opposite a non-radiating edge and a first end and a second end, the first conductive strip is formed into a loop such that the first end and the second end form a gap; a second radiating element comprising a second conductive strip arranged such that a portion of the second radiating element resides internal to the loop formed by the first conductive strip; a second shorting element connecting the second radiating element to the ground plane, the second radiating element not being directly connected to the first radiating element forming a parasitic element to the first radiating element; the second shorting element is drawn through the gap formed by the first radiating element; the first shorting element is generally in the proximity of at least one of the first end or the second end" as claimed in claim 49.

Claims 50-70 have been allowed because claim 50-70 are directly or indirectly being dependent over allowed claim 49.

***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Guo et al. (US 6,734,825) ; Gram (US 6,707,428); Ollikainen et al. (US 6,650,295); and Ollikainen et al.(US 6,552,686); also teach similar inventive subject matter.

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*Correspondence*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ephrem Alemu whose telephone number is (571) 272-1818. The examiner can normally be reached on M-F Flex hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don K Wong can be reached on (571) 272-1834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

EA  
9-17-04

  
**TUYET VO**  
**PRIMARY EXAMINER**